

II. STATUS OF CLAIMS

Claims 1-56 are pending in the application. Claims 1-56 stand rejected. No claims have been added. Claims 18, 28, 39 and 43 have been canceled. Claims 1, 6, 9 and 11 have been amended. No new matter has been added by these amendments.

A. Summary of the Patent Office's Rejections

The Patent Office has made rejections of certain Claims in an Office Action dated May 23, 2011 (hereinafter "Office Action").

B. Rejection under 35 U.S.C. § 101

Claims 1-56 were rejected under 35 U.S.C. §101 as directed to non-statutory subject matter.

C. Rejection under 35 U.S.C. § 102

Claims 6-9, 20-27, 29-38, 40-42, and 49-51, and 54-55 were rejected under 35 U.S.C. §102(b) as allegedly anticipated by U.S. Patent No. 5,868,669 (hereinafter the "'669 Patent").

D. Rejection under 35 U.S.C. § 103

Claims 1, 3-5, 10-13, 15-19, 43-48, 52-53 and 56 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over the '669 Patent in view of U.S. Patent No. 6,149,585 to Gray (hereinafter "Gray").

Claims 2 and 14 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over the '669 Patent in view of Gray and further in view of U.S. Patent No. 6,598,035 to Branson (hereinafter "Branson").

Claims 28 and 39 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over the '669 Patent in view of Branson.

IV. SUMMARY OF TRAVERSES

A. Rejection under 35 U.S.C. § 101

Claims 1-56 recite steps for producing a disease diagnosis, which is a concrete and tangible result. Furthermore, the Claims are tied to a particular machine.

B. Rejection under 35 U.S.C. § 102

Claims 6 and 9 recite limitations which are not disclosed in the '669 Patent. All other Claims rejected under 102 depend from Claims 6 or 9. Specifically, the Patent Office has not established that the '669 Patent discloses "wherein each object has

corresponding data and processes, and wherein the data is encapsulated so that other objects only see the processes of a particular object that can be invoked to access the data.” The Patent Office has therefore failed to establish a prima facie case of anticipation.

C. Rejection under 35 U.S.C. § 103

Claims 1 and 11 recite limitations which are not taught or suggested by the ‘669 Patent or Gray, either alone or in combination. All other Claims rejected under 103 depend from Claims 1 or 11. The Patent Office has therefore failed to establish a prima facie case of obviousness.

V. TRAVERSES

A. Rejection under 35 U.S.C. § 101

The Patent Office rejected Claims 1-56 under 35 U.S.C. §101 as directed to non-statutory subject matter. Applicant respectfully traverses. Claims 1, 6, 9 and 11 are directed to statutory subject matter as the Claims are tied to a particular machine. Furthermore, Claims 1, 6, 9 and 11 produce a diagnosis of a disease, which is a useful, concrete and tangible result.

Claims 1 and 11 describe “[a] method of diagnosing a patient . . . implemented as a set of instructions executed by a computing device” A computing device is a particular machine; in this case a machine specifically configured to diagnose a patient by executing the recited elements. The recited elements define a configuration of the particular machine.

While Applicant believes Claims 6 and 9 are tied to a particular machine, the Claims have been amended to further clarify the correlation. Claims 6 and 9 now recite “An object based automated diagnostic system comprising: a computing device; and computer code, configured to execute on the computing device” The Claims clearly define a configuration of a particular machine.

Claims 1 and 11 specifically recite “outputting, via the computing device, a diagnosis based at least one of the invoking or selecting” Likewise, Claims 6 and 9 specifically recite “a plurality of diagnostic objects which interact to receive input from a user and, as a result of said interaction, determine a diagnosis of a patient” A diagnosis is a concrete, tangible result.

The original specification fully supports the limitations recited in Claims 1, 6, 9 and 11. The specification discloses “Valuator Objects, Question Objects and Node Objects, can be ‘reused’.” (Specification, p.31,ll.25-31). Fig. 31 likewise describes the reuse of medical objects.

The specification discloses:

[T]he List-Based Engine (LBE) is one embodiment of the diagnostic processing method. It is a program that, essentially, takes a set of diseases (more precisely a collection of disease descriptions, symptom definitions, and question specifications) and processes them against one specific patient.

(Specification, p.21,ll.1-5).

Furthermore, the field of the invention is defined as relating to “computerized medical diagnostic systems.” (Specification, p.1,l.24). Methods employed in a “computerized medical diagnostic systems” necessitate a “computing device” to execute “a program that . . . takes a set of diseases . . . and processes them against one specific patient.”

Dependent claims 2-5, 12-19, 43-48, 52-53 and 56 are all presented for analysis based on independent claims 1, 6, 9 and 11.

B. Rejection under 35 U.S.C. § 102

The Patent Office rejected Claims 6-9, 20-27, 29-38, 40-42, and 49-51, and 54-55 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,868,669 (filed January 9, 1997) (hereinafter the “‘669 Patent”).

Applicant respectfully traverses. “An anticipating reference must describe the patented subject matter with sufficient clarity and detail to establish that the subject matter existed and that its existence was recognized by persons of ordinary skill in the field of invention.” *ATD Corp.v. Lydall, Inc.*, 48 USPQ.2d 1321,1328 (Fed. Cir. 1998) citing *In re Spada*, 15 USPQ.2d 1655, 1657 (Fed. Cir. 1990). (Emphasis added).

Furthermore, “anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration.” *W.L. Gore & Assocs. v. Garlock*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Further, “anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the

claim.” *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983). (Emphasis added).

Finally, “the burden of establishing a prima facie case of anticipation resides with the Patent and Trademark Office.” *In re Skinner*, 2 USPQ2d 1788-89 (B.P.A.I. 1986).

The Patent Office has not established that the ‘669 Patent teaches each and every element of the present invention, arranged as in the Claim, with sufficient clarity and detail to establish that the subject matter existed and that its existence was recognized by persons of ordinary skill in the art.

i. The ‘669 Patent does not anticipate Claim 6

The present application claims:

An object based automated diagnostic system comprising:

a computing device; and

computer code, configured to execute on the computing device, the computer code comprising:

a plurality of diagnostic objects which interact, as executed by the computing device, to receive input from a user and, as a result of said interaction, determine a diagnosis of a patient, wherein the objects include at least two diagnostic objects comprising:

a disease object processing data indicative of an abnormal health state or disease, a symptom object processing data indicative of a patient sign, complaint, finding, or test result, a valuator object processing data indicative of a value of a symptom of the patient, a question object processing data indicative of questions to ask the patient specific to a specific symptom of the patient, a node object processing data indicative of a single well-defined question to the patient, and a candidates object processing data indicative of candidate diseases for diagnosis of the patient, wherein the objects are arranged in a hierarchical relationship such that the result of one of the objects is input to another of the objects; and

at least one of the diagnostic objects directly invokes another of the diagnostic objects in a computer-based medical diagnostic system so as to output a diagnosis of a patient based on the prior object invocation,

wherein each object has corresponding data and processes, and wherein the data is encapsulated so that other objects only

see the processes of a particular object that can be invoked to access the data. (Present application, amended Claim 6)

For all of the reasons set forth in Applicant's response to the previous Office Action, the Patent Office has not shown how the '669 Patent anticipates Claim 6. Furthermore, Applicant has amended Claim 6 to include the additional limitation of:

wherein each object has corresponding data and processes, and wherein the data is encapsulated so that other objects only see the processes of a particular object that can be invoked to access the data.

The Patent Office acknowledges that the '669 Patent does not disclose encapsulation of data. Instead, the Patent Office stated:

Branson teaches each object has corresponding data and processes, and wherein the data is encapsulated so that other objects only see the processes of a particular object that can be invoked to access the data (lines 39-50 in col. 6, lines 26-34 in col. 12, and lines 23-31 in col. 15) in order to maintain the integrity of the data.

The portions of Branson cited by the Patent Office disclose "objects that encapsulate data attributes and behaviors" (Branson, col.15,l.27) and "the only access to the information controlled by an object is via the object itself." (Branson, col.6,ll.47-48). Assuming, arguendo, that "information" in Branson anticipates "Data" in the present application, the Patent Office has not shown how an object where "access to the information . . . is via the object itself" (Branson) anticipates "other objects only see the processes of a particular object that can be invoked to access the data." (Present application). Specifically, the Patent Office has not shown how Branson anticipates mechanism wherein "other objects only see [particular] processes[.]"

On that basis, the Patent Office has not established a prima facie case for anticipation as to Claim 6. Furthermore, the Patent Office has not established a prima facie case for obviousness as to Claim 6 based on the '669 Patent or Branson, either alone or in combination. Claims 7-8, 20-27, 29-30, 49-50 and 54 depend from Claim 6. Dependent Claims contain all of the limitations of the Claims from which they depend. Therefore, the Patent Office has not established that the cited references anticipate, teach or suggest Claims 7-8, 20-27, 29-30, 49-50 and 54. Applicant respectfully requests allowance of the Claims.

ii. **The ‘669 Patent does not anticipate Claim 9**

The present application claims:

An object based automated diagnostic system comprising:
a computing device; and
computer code, configured to execute on the computing device, the computer code comprising:
a plurality of diagnostic objects which interact to receive input from a user and, as a result of said interaction, determine a diagnosis of a patient, wherein the diagnostic objects include at least a plurality of disease objects, each disease object processing data indicative of an abnormal health state or disease,
a plurality of symptom objects, each symptom object processing data indicative of a patient sign, complaint, finding, or test result, and a plurality of valuator objects, each valuator object processing data indicative of a value of a symptom of the patient, and
wherein at least some of the diagnostic objects perform their own tasks and directly call upon other diagnostic objects to perform their tasks at the appropriate time in a computer-based medical diagnostic system so as to output a diagnosis of a patient, and
wherein each object has corresponding data and processes, and wherein the data is encapsulated so that other objects only see the processes of a particular object that can be invoked to access the data. (Present application, amended Claim 9)

For all of the reasons set forth in Applicant’s response to the previous Office Action, the Patent Office has not shown how the ‘669 Patent anticipates Claim 9. Furthermore, Applicant has amended Claim 9 to include the additional limitation of:

wherein each object has corresponding data and processes, and wherein the data is encapsulated so that other objects only see the processes of a particular object that can be invoked to access the data.

The Patent Office acknowledges that the ‘669 Patent does not disclose encapsulation of data. Instead, the Patent Office stated:

Branson teaches each object has corresponding data and processes, and wherein the data is encapsulated so that other objects only see the processes of a particular object that can be invoked to access the data (lines 39-50 in col. 6, lines 26-34 in col. 12, and lines 23-31 in col. 15) in order to maintain the integrity of the data.

The portions of Branson cited by the Patent Office disclose “objects that encapsulate data attributes and behaviors” (Branson, col.15,l.27) and “the only

access to the information controlled by an object is via the object itself.” (Branson, col.6, ll.47-48). Assuming, arguendo, that “information” in Branson anticipates “Data” in the present application, the Patent Office has not shown how an object where “access to the information . . . is via the object itself” (Branson) anticipates “other objects only see the processes of a particular object that can be invoked to access the data.” (Present application). Specifically, the Patent Office has not shown how Branson anticipates mechanism wherein “other objects only see [particular] processes[.]”

On that basis, the Patent Office has not established a prima facie case for anticipation as to Claim 9. Furthermore, the Patent Office has not established a prima facie case for obviousness as to Claim 9 based on the ‘669 Patent or Branson, either alone or in combination. Claims 10, 31-38, 40-42, 51 and 55 depend from Claim 9. Dependent Claims contain all of the limitations of the Claims from which they depend. Therefore, the Patent Office has not established that the cited references anticipate, teach or suggest Claims 10, 31-38, 40-42, 51 and 55.

The Patent Office has not established that the ‘669 Patent anticipates each and every element of the present invention, arranged as in the Claims, with sufficient clarity and detail to establish that the subject matter existed and that its existence was recognized by persons of ordinary skill in the art. Therefore, Applicant respectfully submits that the ‘669 Patent fails to support a 102(b) rejection over the present application. Application respectfully requests allowance of his Claims.

C. Rejection under 35 U.S.C. § 103

The Patent Office rejected Claims 1, 3-5, 10-13, 15-19, 43-48, 52-53 and 56 under 35 U.S.C. § 103(a) as unpatentable over the ‘669 Patent in view of U.S. Patent No. 6,149,585 (filed October 28, 1998) (hereinafter “Gray”).

Applicant respectfully traverses. “The PTO has the burden under section 103 to establish a prima facie case of obviousness.” *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988). “To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.” *In re Ryoka*, 180 USPQ 580 (C.C.P.A. 1974). See also *In re Wilson*, 165 USPQ 494 (C.C.P.A. 1970). Further, “[t]o establish a prima facie case of obviousness, three basic criteria must be met. First,

there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” (MPEP § 2143). “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR v. Teleflex*, 550 U.S. 398, 418, 127 S. Ct. 1727, 1741.

“Dependent claims are nonobvious under section 103 if the independent claims from which they depend are nonobvious.” *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

The Patent Office has failed to show how the references, either alone or in combination, teach or suggest all the claim limitations. The Patent Office has also failed to show an explicit reason, suggestion, or motivation to modify the disclosure of the ‘669 Patent, or the disclosure of Gray.

i. The references do not teach the limitations of Claim 1

The present application claims:

A method of diagnosing a patient, implemented as a set of instructions executed by a computing device, through the reuse of medical script objects used in the automated diagnosis or management of a medical condition, the method comprising:

providing, to the computing device, a plurality of disease objects, each disease object processing data indicative of an abnormal health state or disease;

providing, to the computing device, a plurality of symptom objects, each symptom object processing data indicative of at least a patient sign, complaint, finding, or test result;

associating, via the computing device, a disease object with at least one symptom object;

assigning, via the computing device, a weight for each symptom object, wherein a particular disease object includes a preferred weight for one or more preferred symptom objects and an alternative weight for one or more related alternative symptom objects, wherein the preferred symptom objects and the alternative symptom objects for a particular preferred symptom object are selected from a set of archived symptom objects that are available for reuse;

using one of the archived symptom objects in conjunction with a plurality of disease objects;
receiving, via direct interactive dialogue between a user and the computing device, a patient symptom input;
associating the patient symptom input with at least one symptom object;
selecting, via the computing device, at least one disease object applicable to a patient based on at least one of the preferred symptom object or the alternative symptom object;
invoking, via the computing device, a preferred symptom object or one of the related alternative symptom objects for the selected disease object so as to determine a diagnosis of a patient based on the object invocation; and
outputting, via the computing device, a diagnosis based at least one of the invoking or selecting,
wherein each object comprises an encapsulated combination of data and processes that manipulate the data. (Present application, amended Claim 1)

For all of the reasons set forth in Applicant's response to the previous Office Action, the Patent Office has not shown how the '669 Patent or Gray, either alone or in combination, teach or suggest Claim 1. Furthermore, Applicant has amended Claim 1 to include the additional limitation of "using one of the archived symptom objects in conjunction with a plurality of disease objects"

The Patent Office cited portions of the '669 Patent as teaching or suggesting using one of the archived symptom objects in conjunction with a plurality of disease objects The portion of the '669 Patent cited by the Patent Office discloses "the MDATA system . . . asks the patient a series of 'diagnostic screening questions.'" ('669 Patent, col.39, ll.36-38). Furthermore, "[f]rom the answers to theses questions, along with any physical signs . . . the system establishes the most likely cause of the patient's headache." ('669 Patent, col.39, ll.38-41).

The Patent Office appears to be characterizing "a series of 'diagnostic questions'" ('669 Patent) as "archived symptom objects" (Present application). The Patent Office has not shown how a "question" teaches or suggests a "symptom object" or in what way any object disclosed in the '669 Patent may be regarded as "archived[.]" Alternatively, the Patent Office may be characterizing "the patient's headache" ('669 Patent) as "the archived symptom objects" (Present application). Again, the Patent Office has not shown how a "headache" teaches or

suggests a “symptom object” or in what way any object disclosed in the ‘669 Patent may be regarded as “archived[.]” Furthermore, the Patent Office has not shown how the ‘669 Patent discloses “using . . . archived symptom objects in conjunction with a plurality of disease objects” (Present application)(emphasis added).

On that basis, the Patent Office has not established a prima facie case for obviousness as to Claim 1. Claims 2-5, 19, 45-48 and 53 depend from Claim 1. Dependent Claims contain all of the limitations of the Claims from which they depend. Therefore, the Patent Office has not established a prim facie case for obviousness as to Claims 2-5, 19, 45-48 and 53. Applicant respectfully requests allowance of the Claims.

ii. The references do not teach the limitations of Claim 11

The present application claims:

A method of diagnosing a patient through the reuse of medical script objects implemented as a set of instructions executed by a computing device and used in the automated diagnosis or management of a medical condition, the method comprising:

- providing a plurality of disease objects, each disease object processing data indicative of an abnormal health state or disease and each disease object associated with a plurality of symptom objects, each symptom object processing data indicative of a patient sign, complaint, finding, or test result;

- receiving, via direct interactive dialogue between a user and the computing device, a patient symptom input;

- associating the patient symptom input with at least one symptom object;

- assigning, via the computing device, a weight for one or more symptoms, wherein a particular disease object includes a preferred weight for one or more preferred symptoms and an alternative weight for one or more alternative symptoms, wherein the alternative symptoms for a particular preferred symptom are selected from a set of archived symptom objects that are available for reuse, and wherein the particular preferred symptom has one or more related alternative symptoms that represent different approaches for eliciting further diagnostic information related to a same patient health condition;

- using one of the archived symptom objects in conjunction with a plurality of disease objects;

- selecting, via the computing device, from the plurality of disease objects, a disease object applicable to a patient;

- invoking, via the computing device, a preferred symptom

object or one of the related alternative symptom objects for the selected disease object so as to output a diagnosis of a patient based on the object invocation; and
outputting, via the computing device, a diagnosis based at least one of the invoking or selecting. (Present application, Claim 11)

For all of the reasons set forth in Applicant's response to the previous Office Action, the Patent Office has not shown how the '669 Patent or Gray, either alone or in combination, teach or suggest Claim 11. Furthermore, Applicant has amended Claim 11 to include the additional limitation of "using one of the archived symptom objects in conjunction with a plurality of disease objects"

The Patent Office cited portions of the '669 Patent as teaching or suggesting using one of the archived symptom objects in conjunction with a plurality of disease objects” The portion of the '669 Patent cited by the Patent Office discloses “the MDATA system . . . asks the patient a series of ‘diagnostic screening questions.” ('669 Patent, col.39,ll.36-38). Furthermore, “[f]rom the answers to theses questions, along with any physical signs . . . the system establishes the most likely cause of the patient's headache.” ('669 Patent, col.39,ll.38-41).

The Patent Office appears to be characterizing “a series of ‘diagnostic questions’” ('669 Patent) as “archived symptom objects” (Present application). The Patent Office has not shown how a “question” teaches or suggests a “symptom object” or in what way any object disclosed in the '669 Patent may be regarded as “archived[.]” Alternatively, the Patent Office may be characterizing “the patient's headache” ('669 Patent) as “the archived symptom objects” (Present application). Again, the Patent Office has not shown how a “headache” teaches or suggests a “symptom object” or in what way any object disclosed in the '669 Patent may be regarded as “archived[.]” Furthermore, the Patent Office has not shown how the '669 Patent discloses “using . . . archived symptom objects in conjunction with a plurality of disease objects” (Present application)(emphasis added).

On that basis, the Patent Office has not established a prima facie case for obviousness as to Claim 11. Claims 12-17, 44, 52 and 56 depend from Claim 11. Dependent Claims contain all of the limitations of the Claims from which they depend. Therefore, the Patent Office has not established a prim facie case for

obviousness as to Claims 12-17, 44, 52 and 56. Applicant respectfully requests allowance of the Claims.

Furthermore, Applicant respectfully traverses all the arguments made in the office action that were not specifically addressed herein, and continues to assert all arguments presented in all prior Office Actions.

IV. CONCLUSION

In light of the foregoing amendments and arguments, reconsideration of the claims is hereby requested, and a Notice of Allowance is earnestly solicited.

Respectfully submitted,

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